

REMARKS

This application has been reviewed in light of the Office Action dated December 31, 2003. Claims 1-3 and 7-11 are pending in this application. Claims 1 and 8, which are in independent form, have been amended to define still more clearly what Applicants regard as their invention, in terms that distinguish over the art of record. Claims 2, 7, and 11 have been amended as to matters of form only, and those amendments do not narrow the scope of any claims. Favorable reconsideration is requested.

The Examiner objected to the specification, noting that “[a] reference to the prior application must be inserted as the first sentence of the specification of this application or in an application data sheet, if applicant intends to rely on the filing date of the prior application. . . .” One of Applicants’ attorneys reviewed, by telephone on January 16, 2004, this point with the Examiner, and informed him that the Preliminary Amendment dated April 25, 2001, did amend the specification in accordance with 35 U.S.C. § 120, and that the Application Data Sheet (ADS) made reference to the foreign priority document. The Examiner, upon further review, replied that the objection was made in error, i.e., that the priority information included in the Preliminary Amendment and ADS was proper. Therefore, Applicants respectfully request that this objection be withdrawn.

Claim 1 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Japanese Patent Application Laid-Open No. 09-098970 (Endo et al.) in view of Japanese Patent Application Laid-Open No. 06-313392 (Umibe et al.); Claims 2, 3, and 9 were rejected as being obvious from Endo et al. in view of Umibe et al. and further in view of U.S. Patent No. 5,591,963 (Takeda et al.); Claim 7 was rejected as being obvious from Endo et al. in view of Takeda et al., and further in view of U.S. Patent No. 5,591,960

(Furukawa et al.) and U.S. Patent No. 4,740,710 (Arita); Claim 8 was rejected as being obvious from Endo et al. in view of Umibe et al. and U.S. Patent No. 5,596,198 (Perez-Mendez), or, in the alternative, in view of Umibe et al. and U.S. Patent No. 4,179,100 (Sashin et al.); Claim 10 was rejected as being obvious from Endo et al. in view of Umibe et al. and Perez-Mendez, or, in the alternative, in view of Umibe et al. and Sashin et al., and further in view of Japanese Patent Application Laid-Open No. 63-250634A (Takeuchi et al.); and Claim 11 was rejected as being obvious from Endo et al. in view of Umibe et al., and further in view of Japanese Patent Application Laid-Open No. 6-029510A (Hikiji et al.). Applicants respectfully traverse these rejections.

Applicants submit that amended independent Claims 1 and 8, together with the remaining dependent claims are patentably distinct from the proposed combination of the cited prior art for at least the following reasons.

The aspect of the present invention set forth in Claim 1 is a photoelectric converter that includes a photoelectric conversion element of a laminated structure including a first electrode layer, an insulation layer, a photoelectric conversion semiconductor layer, an injection blocking layer, a second electrode layer, and a switching means. The insulation layer is for blocking the passage of holes and electrons. The injection blocking layer blocks the injection of holes or electrons (but not both) into the photoelectric conversion semiconductor layer. The switching means operates the photoelectric converter by switching through operation modes including a photoelectric conversion mode, an idling mode, and a refresh mode. In the photoelectric conversion mode are emitted holes or electrons, whichever are emitted in the idling mode, generated in accordance with an amount of incident light and read image information. In the idling

mode, which is not used for reading image information, holes or electrons, whichever are emitted in the photoelectric conversion mode, are emitted from the photoelectric conversion element by connecting the switching element and an idle terminal connected to a power source for applying an electric field weaker than an electric field applied at the photoelectric conversion mode.

Among the notable features of Claim 1 is that in the idling mode holes or electrons are emitted from the photoelectric conversion element by connecting the switching element and an idle terminal connected to a power source for applying an electric field weaker than an electric field applied in the photoelectric conversion mode. Support in the specification for this feature can be found at least at page 47, lines 10 to 26.

Endo et al. relates to x-ray photographing equipment. The Office Action at page 6 states that Endo et al. does not teach “to distinguish an idling mode for emitting electrons, hence the same of the electrons or holes as emitted by the photoelectric conversion mode, from the photoelectric conversion element,” However, the Examiner states that it would have been obvious to include said idling mode in view of Umibe et al., which teaches “the inclusion of an accumulation mode whereby the G electrode become[s] open with regard to direct current, thus allowing any electrons created due to incidence of light to be accumulated as a charge on a capacitor”(Drawing 8, and section [0051] of the specification. Applicants note that section [0051] discusses shifting to an accumulation mode and detection mode based on a position of a switching device. Applicants submit, however, that nothing in this section or any other section of the specification would teach or suggest a relation of electric fields between an electric field applied in the idling mode and an electric field applied in the photoelectric conversion

mode, as recited in Claim 1.

Applicants submit that, at least for the reasons discussed above, the proposed combination of Endo et al. and Umibe et al., assuming such combination would even be permissible, would still fail to teach or suggest the idling mode, as recited in Claim 1. For at least this reason, Applicants submit that Claim 1 is patentable over these two patents, taken separately or in any proper combination.

Independent Claim 8 is a system claim that also recites a relation of electric fields between an electric field applied in the idling mode and an electric field applied in the photoelectric conversion mode, as recited in Claim 1. Accordingly, Claim 8 is believed to be patentable for at least the same reasons as discussed above in connection with Claim 1.

A review of the other art of record has failed to reveal anything that, in Applicants' opinion, would remedy the deficiencies of the art discussed above, as applied against the independent claims herein. Therefore, those claims are respectfully submitted to be patentable over the art of record.

The other rejected claims in this application depend from one or another of the independent claims discussed above and, therefore, are submitted to be patentable for at least the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, individual reconsideration of the patentability of each claim on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and allowance of the present application.

Applicants' undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,

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